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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,044	08/10/2000	Amos Tanay	3757-1	6487

7590

01/24/2002

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EXAMINER

GARY, ERIKA A

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 01/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/636,044

Applicant(s)  
Tanay et al.

Examiner  
Erika A. Gary

Art Unit  
2685



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 10, 2000
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 and 26 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 8, 9, 13-16, 19, and 23-25 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6, 7, 10-12, 17, and 18 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 8, 9, 13-16, and 19 rejected under 35 U.S.C. 102(b) as being anticipated by Arpee et al., US Patent Number 5,926,762 (hereinafter Arpee).

Regarding claim 1, Arpee discloses a method of generating an impact matrix for use in allocating frequency channels in a wireless communication network service area, the network area divided into a plurality of sectors which are further divided into a plurality of pixels, the impact matrix providing impact scores which characterizes sector by sector channel interference in the network service area, the method comprising: merging signal propagation analysis data and empirical measurement data to determine an anticipated signal level for each one of the plurality of pixels in the network service area; determining which one of the sectors in the network service area is a serving sector for the pixel; determining channel interference impact scores for the pixel based on the interference between the pixel's serving sector and each of the other sectors in the network service area; and providing sector by sector impact scores [col. 11: line 14 - col. 12: line 4].

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Regarding claim 2, Arpee discloses merging propagation analysis is performed according to user ascribed confidences [col. 11: lines 56-58].

Regarding claim 5, Arpee discloses modifying the impact scores in the impact matrix according to channel pairing relationships among sectors which are known to provide high levels and low levels of interference [col. 12: lines 2-4].

Regarding claim 8, Arpee discloses a system for developing an impact matrix for use in frequency channel planning in a wireless communication network service area, the communication network service area divided into sectors and pixels, the system comprising: means for determining a signal strength level for each pixel in the network service area; means for determining which is a serving sector for each pixel in the network service area; means for determining an interference impact score between each pixel's serving sector and each of the other non-serving sectors in the network service area; and means for determining overall sector by sector impact scores for inclusion in the impact matrix, the overall sector by sector scores based on the interference impact scores for the pixels within which a sector is the serving sector [col. 11: line 14 - col. 12: line 4].

Regarding claim 9, Arpee discloses the means for determining a signal strength for each pixel in the network service area comprises means for conducting a propagation analysis and means for performing empirical measurements [col. 11: lines 20-22, 56-58].

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Regarding claims 13 and 15, Arpee discloses modifying the impact matrix based on data which specifies co-channel assignments (or adjacent channel assignments) which will not result in excessive interference [col. 12: lines 2-4].

Regarding claims 14 and 16, Arpee discloses modifying the impact matrix based on data which specifies co-channel assignments (or adjacent channel assignments) which will result in excessive interference [col. 12: lines 2-4].

Regarding claim 19, Arpee discloses the impact matrix allows a user to make and evaluate individual channel assignments in the communication network [col. 12: lines 2-3].

3. Claims 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Gunmar et al., US Patent Number 5,293,640 (hereinafter Gunmar).

Regarding claim 23, Gunmar discloses a method of using an impact matrix for frequency channel planning in a wireless communication network divided into sectors, the impact matrix providing sector by sector signal quality interference ratings, the method comprising: determining an incremental quality degradation for a potential channel assignment in the network using the impact matrix; and assigning frequency channels to sectors according to the incremental quality degradation provided by the impact matrix [col. 2: line 53 - col. 3: line 6; col. 7: lines 52-55].

Regarding claim 24, Gunmar discloses the impact matrix proved co-channel interference ratings [col. 7: lines 32-36].

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Regarding claim 25, Gunmar discloses the impact matrix proved adjacent channel interference ratings [col. 7: lines 32-36].

***Allowable Subject Matter***

4. Claims 20-22 and 26 and allowed. Prior art has not been found that suggests or renders obvious the limitations of independent claims 20 and 26 disclosing creating an impact matrix for use in frequency allocation in a wireless communication network comprising: determining weighted interference impact scores for pixels based upon each of the non-serving sectors' interference impact upon the pixel's serving sector, and determining overall impact scores based upon the weighted interference impact scores. Specifically, the weighting is viewed in light of the specification on page 19 and the overall impact scores are viewed in light of pages 21 and 22.

5. Claims 3, 4, 6, 7, 10-12, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Kornstedt et al., US Patent Number 6,012,329, disclose a method and associated apparatus for determining cell relationships in a radio communication system.

Isaksson, US Patent Number 6,137,991, disclose estimating downlink interference in a cellular communications system.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erika Gary whose telephone number is (703) 308-0123. The examiner can normally be reached on Monday-Thursday from 7:30 am to 5:00 pm. The examiner can also be reached on alternate Fridays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4750 or to the 2600 Customer Service Office at (703) 306-0377.


**Any response to this action should be mailed to:**

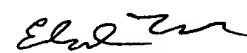
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9314 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park II,  
2121 Crystal Drive Arlington, VA., Sixth Floor (Receptionist).

Erika Gary   
January 17, 2002

  
EDWARD F. URBAN  
PRIMARY EXAMINER